

Remarks

In the Office Action dated June 16, 2005, claims 19-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,171,477 to Funari (“Funari”). Though previously pending, Applicants note that claims 49-68 were not addressed in the Office Action.

By this Amendment, Applicants add claims 69-80. Accordingly, claims 19-80 are presently pending. No new matter has been added by the addition of these claims.

Rejection under 35 U.S.C. § 103(a)

In rejecting claims 19-48 under 35 U.S.C. § 103(a), the Office Action appears to conclude that the flexural strength, density, thermal conductivity, and electrical resistivity recited in the pending claims would have been obvious because Funari discloses a graphite heater and the Applicants’ specification provides that solder tool electrodes preferably are made of graphite. Applicants overcame a similar rejection during prosecution of the parent application.

The present application is a continuation of U.S. Patent Application Serial No. 10/016,937 (the “‘937 Application”), which was issued as U.S. Patent No. 6,646,228. In the ‘937 Application, the Examiner rejected the pending claims under 35 U.S.C. § 103(a) as being unpatentable over a combination of Funari and two other references. As in the present rejection, the Examiner during prosecution of the ‘937 Application initially determined that the claims merely recited inherent characteristics of a graphite-containing electrode.

Applicants’ responses to the prior rejections included submissions of two Inventor’s Declarations under 37 C.F.R. § 1.132, attached hereto for reference. In light of the explanation in the Inventor Declarations, the Examiner concluded that the recited characteristics are not inherent properties of graphite:

The submitted Rule 132 affidavit provides sufficient evidence to rebut the examiner’s presumption noted in Pages 3-5 of the final

rejection (Paper No. 6). In the final rejection, the examiner presumed that the Funari graphite material exhibited the claimed thermal conductivity, flexural strength, and density characteristics.

However, Applicant's submitted test results conclusively show that not all graphite materials with resistivity commensurate with Funari's graphite also have values of thermal conductivity, flexural strength, and density commensurate with the claimed values. Accordingly, the examiner believes that the prior art of record does not fairly teach or suggest a soldering iron using a particular type of graphite material with the combination of claimed properties recited in the independent claims.

‘937 Application, Examiner’s Statements of Reasons for Allowance, dated June 3, 2003

(emphasis added).

The Examiner’s reasons for allowing the ‘937 Application are pertinent to the present rejection as well. Independent claims 19, 29, 37, and 43 are apparatus claims with a heating device or heating element having minimum values of resistivity, flexural strength, and density. As described in the Inventor Declarations, graphite-based compositions may have a resistivity, flexural strength, or density that is below the claimed values. The characteristics vary depending upon the composition of the tip used. Funari fails to teach or suggest using a heating device electrically connected to an electrical power source (as in claim 19) or a heating element (as in claims 29, 37, and 43) having electrical resistivity of 1,500 micro-Ohm-cm or greater, flexural strength of at least about 1,500 psi, and a density of about 15. to 1.75 g/cc. In fact, Funari fails to provide any disclosure of any flexural strength or density at all.

Because Funari does not discuss or disclose every recited claim limitation, and these claim limitations are not inherent characteristic of the graphite material disclosed in Funari, the claims are not rendered obvious over the reference. Accordingly, Applicants respectfully request withdrawal of the prior art rejection.

Claims 49-68

Claims 49-68 were not addressed in the Office Action. Independent claims 49, 56, 61 and 65 each recite a heating device (claim 49) or heating element (claims 56, 61 and 65) having a minimal resistivity and a range of densities. As discussed above, Funari provides no discussion of any density associated with a graphite material. Since the claimed range of densities is not an inherent characteristic of the graphite material disclosed in Funari, the claims are patentably distinct over the reference as well.

For the reasons stated above, it is respectfully submitted that pending claims 19-68 are in condition for allowance. Newly added claims 69-80 recite additional patentable subject matter, and are believed to be allowable as well. Therefore, a Notice of Allowance is believed in order, and is courteously solicited.

The Examiner is respectfully requested to contact the undersigned, if it is believed that such contact would further the examination of the present application.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees that may be required for this Response, or credit any overpayment, to deposit account number 08-0219.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of which is required to make this response timely, and is hereby authorized to charge any fee for such, to deposit account number 08-0219.

Respectfully submitted,



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